

Sleep Related Gastroesophageal Reflux The Tip Of The Iceberg Is Showing!

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Commentary on Dickman R; Green C; Fass SS; Quan SF; Dekel R; Risner-Adler S; Fass R. Relationships between sleep quality and ph monitoring findings in persons with gastroesophageal reflux disease. *J Clin Sleep Med* 2007;3(5):505-513.

With many medical disorders, it takes decades for investigators to examine their effects on sleep. This is truly the case for gastroesophageal reflux (GER). Gastroesophageal reflux is very common in our population, with 7% of adults experiencing symptoms daily and 20% experiencing symptoms at least weekly.^{1,2} Since obesity is a predisposing factor for GER, the prevalence of GER prevalence will increase as obesity prevalence reaches epidemic proportions. Currently, sleep related GER is underappreciated from a clinical standpoint.³ Although gastroenterologists were slow to recognize the impact of sleep related GER on daytime functioning, they were insightful enough to recognize the need for 24-hour monitoring when esophageal pH testing was developed in the 1970s.⁴ Since then, Orr and colleagues have performed multiple experiments examining esophageal acid clearance during sleep using esophageal acid infusions.^{5,6}

Over the past 3 years, research has focused on the impact of GER on sleep itself and on daytime consequences of sleep related GER. The tip of the iceberg was discovered! A national population-based telephone survey of 1000 people with heartburn conducted by the Gallup Organization noted that nighttime heartburn was reported by 79% of respondents; 75% of these reported that heartburn affected their sleep, and 40% believed that nighttime heartburn impaired their daytime functioning.³ Despite having prescription GER medications, only 49% of respondents had adequate control of their GER symptoms. Fass and colleagues examined predictors of heartburn during sleep in the 15,314 subjects of the Sleep Heart Health Study, noting that 25% reported heart-

burn during sleep.⁷ Predictors of heartburn during sleep, using multivariate models include increased body mass index, snoring, sleepiness (as noted on the Epworth Sleepiness Scale), hypertension, asthma, and use of benzodiazepines.⁷

In this issue of the *Journal of Clinical Sleep Medicine*, Dickman and colleagues examined 48 subjects with GER symptoms, with 16 subjects undergoing esophageal pH monitoring during polysomnography.⁸ Disorders of initiating and maintaining sleep were associated positively with GER severity on validated questionnaires. Furthermore, subjects who reported more nighttime awakenings had higher GER symptom scores. This study also gives insight as to when acid GER events occur. Approximately 54% of the GER events occurred during sleep and of those, 62% of GER events were followed by an awakening. Ninety percent of GER events that occurred during sleep were associated with sleep disruption. So, individual GER events *do* disrupt sleep architecture. Although this study was not specifically designed to answer the question as to whether sleep time events can affect wake time GER, it gives preliminary evidence that it may. Poor sleep did worsen GER the following day. Poorer sleep quality obtained from the Sleep Quality Questionnaire was associated with longer acid GER events.⁸ This cycle can be stopped because aggressive GER therapy can improve sleep outcomes and daytime functioning as noted by Johnson and colleagues.⁹ They performed a placebo-controlled trial utilizing esomeprazole 40 mg, 20 mg, or placebo for 6 weeks in 750 adults with GER-associated sleep disturbance. Fifty percent of the esomeprazole-treated subjects had resolution of nighttime heartburn, and by 4 weeks, 73% of the esomeprazole-treated subjects had resolution of their GER-associated sleep disturbance. Both doses of esomeprazole resulted in improved sleep quality, reduced lost work hours, and increased work productivity.⁹

So now that the tip of the iceberg is exposed and treatment is available, sleep professionals need to inquire about GER symptoms in patients who present with awakenings and/or excessive daytime sleepiness. Many unanswered questions still remain concerning sleep related GER that will require interdisciplinary studies with our gastroenterology colleagues.

Disclosure Statement

Dr. Harding has consulted for Astra-Zeneca.

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